JAPAN

EDICT OF GOVERNMENT

In order to promote public education and public safety, equal justice for all, a better informed citizenry, the rule of law, world trade and world peace, this legal document is hereby made available on a noncommercial basis, as it is the right of all humans to know and speak the laws that govern them.

JIS B 6606 (1983) (English): Safety standards for construction of band resaws with feed rollers

安 倂

The citizens of a nation must honor the laws of the land.

Fukuzawa Yukichi

BLANK PAGE

BLANK PAGE

UDC 621.935 : 62-78

JIS

JAPANESE INDUSTRIAL STANDARD

Safety Standards for Construction of Band Resaws with Feed Rollers

JIS B 6606—1983

Translated and Published

by

Japanese Standards Association

Printed in Japan

Translation without guarantee
In the event of any doubt arising, the original
standard in Japanese is to be evidence

UDC 621.935:62-78

JAPANESE INDUSTRIAL STANDARD J I S

Safety Standards for Construction of Band Resaws with Feed Rollers

B 6606-1983

1. Scope

This Japanese Industrial Standard specifies the construction for safety, safety devices, instruction manuals, inspection data sheets and marking on the band resaws with automatic feed rollers([1]), hereinafter referred to as the "band resaws").

Note ([1]) Refer to JIS B 0114.

2. Definitions

For the purposes of this Standard the following definitions apply:

(1) driving saw wheel Of the two saw wheels composing the band resaw, the one saw wheel which is driven by a motor.

(2) cutting side Of the two straight parts of a saw blade strained between the two saw wheels composing the band resaw, the one side which cuts workpieces.

(3) suppressing device A device which suppresses the transverse vibration of saw blades. This is composed of suppressing bars, suppressing-bar holders, suppressing arms and others.

(4) tensile force A tensile force exerted to the saw blade through the two saw wheels composing a band resaw.

(5) concave space That space between the frame holding the top saw wheel and the straight part on the cutting side of a saw blade.

Applicable Standards:

JIS B 0114-Glossary of Terms for Wood Working Machinery

JIS G 4051-Carbon Steels for Machine Structural Use

JIS G 5501-Gray Iron Castings

Reference Standards:

JIS B 6507-General Code of Safety for Wood Working Machinery

JIS B 6509-Test Code for Performance and Accuracy of Band Saw Machines and Feed Carriages

3. Construction for Safety

3.1 Starting Switch The starting switch (this means the switch for opening and closing the power supply circuit.) shall be as given below:

(1) The starting switch shall be so located that the operator can operate the switch without leaving his working position.

In addition, as far as the starting of the body of band resaws is concerned, the operator shall be able to check the behavior of the saw blade, irrespective of his working position, and furthermore, to operate the switch at the position where he can adjust the saw blade condition.

(2) The starting switch shall be easy to operate, and there shall be no possibility that the band resaw suddenly starts due to contact, vibration and others.

3.2 Restart Preventing Device The band resaw shall be equipped with a device which automatically keeps the power supply circuit in open condition at the time of its interruption or in the case where the electric source circuit for driving is opened, and which, after the restoration of the power supply service or in the case where the electric source circuit for driving is closed, automatically prevents the body of the band resaw and the other devices from restarting.

3.3 Saw Wheel The saw wheels shall be as given below:

(1) The saw wheels shall have sufficient strength against the force exerted by saw blades such as the tensile force, centrifugal force and braking force.

(2) The materials of the driving saw wheel shall be FC 20 of JIS G 5501 or those having equivalent or superior mechanical properties.

(3) The materials of the saw wheel shafts shall be S 45 C of JIS G 4051 or those having the mechanical properties equivalent or superior.

3.4 Braking Device of Driving Saw Wheel The braking device of the driving saw wheel shall be in accordance with the following.

(1) The driving saw wheel shall be equipped with the braking device which is capable of braking its motion effectively.

(2) The braking device shall be so constructed that is can easily be operated and can be adjusted so as to funciton effectively.

(3) The braking device operated by hand or foot shall conform to the following items:

(a) The operating direction shall be towards the non-cutting side.

(b) In order to prevent the operator from stumbling, falling down and the like, handles shall be provided.

(c) The foot pedal shall be provided with nonslip surface, and with the stopper which prevents the pedal from descending down lower than the horizontal level.

3.5 Saw Blade Straining Device The saw blade straining device shall be as prescribed below in accordance with the following (see Fig. 1):

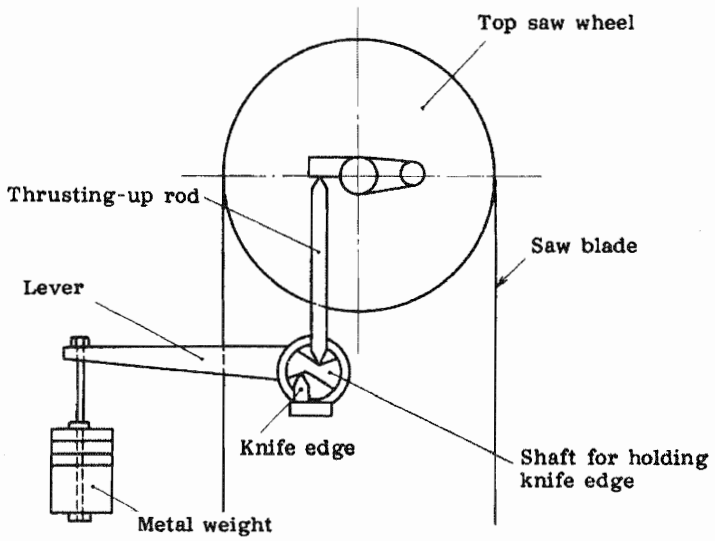
(1) The mechanism of the device shall be such that the saw blade always maintains reasonable tensile force corresponding to saw blade widths and saw thicknesses, cutting conditions and others, and works with suitable sensibility.

(2) In order always to maintain the tensile force described in (1), it is desirable that the band resaw should be provided with such a mechanism that, in case where the saw blade is abnormally strained due to some reason, the body of the band resaw cannot be started and the running resaw sounds an alarm, or its power supply circuit is opened and the braking device is automatically actuated.

(3) The material of the thrusting-up rod, the shaft holding the knife edges and the knife edges of saw blade straining devices of the lever type band shall be S 45 C of JIS G 4051 or those having equivalent or superior mechanical properties and hardening treatment shall be given to the portions required to enhance abrasion resistance.

(4) It is desirable that the band resaw should be provided with a straining device which has a funciton of preventing any abnormal running behavior such as dislocation of the saw blade out of the saw wheel, or with a mechanism which detects such behavior and sounds an alarm, or a system which immediately opens the power circuit and automatically actuates a braking device.

Fig. 1. Saw Blade Straining Device



Remark: Figure gives an example, and does not specify the construction.

3.6 Device for Inclining Top Saw Wheel The device for inclining the top saw wheel shall be so mechanized that the inclination of the saw wheel in its running does not vary even when any force is suddenly applied to the operating handle.

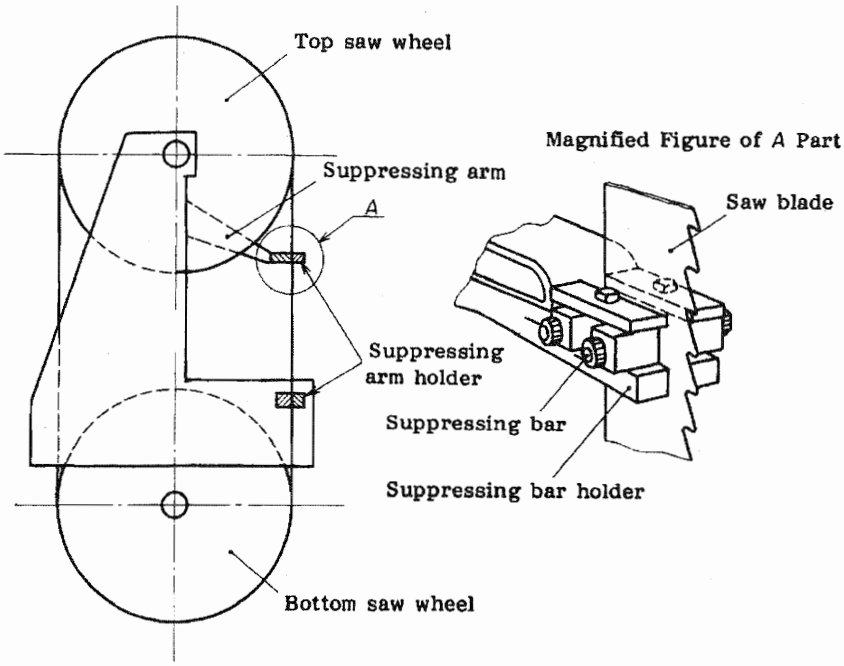
3.7 Suppressing Device The suppressing device shall be as prescribed below (see Fig. 2):

(1) The suppressing bars shall be such that their fixed position can easily be adjusted according to saw blade widths.

(2) The suppression arm shall be so mechanized that its ascending and descending operations can be done where there is no danger of its contacting the saw teeth.

(3) The upper suppressing bar holder shall be capable of descending down as low as possible to the position making the clearance between its lower end and the workpiece the smallest.

Fig. 2. Suppressing Device



Remark: Figure gives an example, and does not specify the construction.

3.8 Device for Eliminating Extraneous Matter from Saw Wheel and Saw Blade The band resaws machine shall be equipped with the clearing plates which eliminate saw dusts, resin and the like adhering to the saw wheel and saw blade some or other, and a device for eliminating other matter coming from the oiling device and the like.

Furthermore, the extraneous matter eliminating device shall have no possibility of inflicting any damage on the saw wheel and saw blade.

3.9 Device for Preventing Chips and Others from Being Caught in Bottom Saw Wheel A device for the prevention shall be provided in such a place where chips, barks and others are liable to be caught between the bottom saw wheel and the saw blade.

Furthermore, the part of the preventing device adjacent to the saw blade shall be made of materials which are not liable to inflict damage on the saw blade, and which are highly interchangeable.

3.10 Ruler The rulers shall be so constructed that they can be fixed securely and can be operated and adjusted with ease.

3.11 Spike of Roller with Spike The spikes shall be fixed so as not to cause their looseness or falling-off and be so constructed that they can easily be interchanged in case of their wear or breakage.

4. Safety Devices

4.1 Sawteeth Cover The sawteeth cover shall be so constructed that it can cover the sawteeth except for its portion necessary for the cutting the workpiece.

Furthermore, the sawteeth cover on the cutting side of the workpiece, hereinafter referred to as the "contact preventing device" shall be as prescribed below:

(1) The material shall be the steel plate 1 mm or over in thickness or that having the equivalent or superior strength.

(2) The contact preventing device shall be an integrated construction with the suppressing bar holder, and its ascending and descending operations shall be performed mechanically.

(3) The contact preventing device shall cover 3 faces except the concave space side, and the front side shall be so constructed as to be opened and closed.

(4) The contact preventing device shall be so constructed that the sawteeth do not protrude into the space between its upper end and the lower end of the top saw wheel cover even when the suppressing bar holder is lowered down to the lowest limit position.

(5) The device shall be so constructed that the front view is not obstructed excessively.

4.2 Saw Wheel Cover The saw wheel cover shall be in accordance with the following.

(1) The materials shall be the steel plate 1 mm or over in thickness or those having the equivalent or superior strength.

(2) The cover shall cover the upper face and the front, rear, left and right faces of the saw wheel.

Furthermore, the top saw wheel cover, even when the saw wheel is lowered down to the lowest limit position, shall still cover the lower end of the saw wheel.

(3) The materials of the lower saw wheel cover which also covers the pit shall be the steel plate 3 mm or over in thickness, or those having the equivalent or superior strength.

(4) The top saw wheel cover shall be internally lined with any effective shock absorbing material for preventing flying out the saw blade from fragments due to the breakage of the saw blade.

(5) The interval between the upper end of the top saw wheel at its highest position and the surface of the internal lining of the cover shall be 100 mm or over.

(6) The top saw wheel cover shall be equipped, at an appropriate place of the inner face on the sawteeth side, with the holder for receiving the saw blade dislocated out of the saw wheel.

(7) On the top saw wheel cover, a peephole for checking the relative position of the saw wheel and the saw blade may be provided. In this case, however, its opening shall be of sufficiently robust construction.

4.3 Feed Roller Cover The feed rollers with spikes, the sawteeth shaped feed rollers, or the roulette shaped feed rollers, hereinafter referred to as the "feed roller", to be mounted to the band resaws shall be furnished with any cover conforming to (1) or (2). However, this is not applicable to the band resaw the construction of which is such that the workpiece feed is conducted by material feeding-in and feeding-out devices and the like and there is no possibility of the operator's access to the feed rollers.

(1) Integral Type Cover

(a) The materials of the cover shall be the steel plate 1.5 mm or over in thickness, or those having equivalent or superior strength.

(b) The cover shall cover 1/2 or over of the outer peripheral face of the roller excluding the feed-in side of the workpiece.

(c) The clearance between the inner face of the cover and the feed roller surface (its tip in the case of the roller with spikes or sawteeth type) shall be 15 mm or over.

(d) The cover shall be so constructed as to be capable of climinating such foreign matters as chips and barks with ease.

(e) In the vertical shaft type feed roller, the clearance between the lower end of the cover and the upper face of the table shall be 8 mm or under.

(2) Split Type Cover

(a) The materials to be used for the contact preventing palte of the split type cover shall be the steel plate 3 mm or over in thickness, or those having equivalent or superior strength.

(b) The materials to be used for the spring and supporting rod of the contact preventing plate shall have strength sufficient for supporting the plate.

(c) The drum side of the supporting rod of the contact preventing plate shall be processed with stopper to keep the supporting rod from coming off the drum.

(d) The outer peripheral face of the contact preventing plate shall protrude 5 mm or over from the feed roller surface (from its tip end in the case of the roller with spikes or sawteeth type).

(e) The clearance between the lower end of the contact preventing plate and the upper face of the table shall be 8 mm or under.

4.4 Sudden Stop Device of Feed Roller The feed roller of the band resaw shall be equipped with the sudden stop device in accordance with the following.

(1) When an operator touches the contact plate of the sudden stop device, the rotation of the feed roller shall stop suddenly and the feed roller shall move to the safety side.

(2) The device shall be so constructed as to be operated easily by the operator eigher from the feed-in side or from the feed-out side of the workpiece.

(3) Electric parts such as a limit switch and an electromagnetic valve to be used for the sudden stop device of the feed roller shall be so constructed as to shut out powder, dust and the like.

4.5 Sudden Stop Devices for Automatic Feed-in and Feed-out Device Of the feed-in and feed-out devices described in 4.3, the automatic type devices shall be provided with a sudden stop device which works simultaneously with the stop of the feed roller.

4.6 Automatic Stop of Feed Roller on Entrance into Dangerous Region That type of the band resaws which is equipped with the feed-in device in front of the feed roller shall be provided with a mechanism through which the feed roller is stopped automatically, in case operators, by mistake, enter the dangerous region leading them to the feed roller.

5. Instruction Manual

The band resaw shall be furnished with an instruction manual in which shall be enumerated matters necessary for securing safety such as the type, specifications, construction, saw blades used, operations, maintenance, inspection, adjustment, installation and other matters.

6. Inspection Data Sheet

The band resaw shall be provided with inspection data sheets (inspection items and results thereof) relating to safety.

7. Marking

The band resaw shall be marked with the following information in a conspicuous place by an indelible way.

(1) Manufacturer's name

(2) Year and month of manufacture and serial number

(3) Type

(4) Rated output or rated current

(5) Rated voltage

(6) No load speed of rotation

(7) Tensioning magnification

(8) Mass of standard metal weights and standard oil pressure (the mass of standard metal weights and standard oil pressure imparting an adequate tensile force to the saw blade, according to saw widths, saw thickness and others)

(9) Feed speed (In the case of resaws having a speed change mechanism, feed speeds according to the steps of speed change)

(10) Other matters particularly required for safety

B 6606-1983
Edition 1

Japanese Text

Established by Minister of International Trade and Industry

Date of Establishment: 1983-08-01

Date of Public Notice in Official Gazette: 1983-08-04

Investigated by: Japanese Industrial Standards Committee

Divisional Council on Machine Tool

Technical Committee on Woodworking Machines

This English translation is publsihed by:
Japanese Standards Association
1-24, Akasaka 4, Minato-ku,
Toiyo 107 Japan

Printed in Tokyo by
Hohbunsha Co.,Ltd.